# Increasing the versatility of an ex vivo model in nanosafety studies and fibrosis

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**Stellingen**

1. Whether nanomaterials are intended to be used for biomedical applications or enter and distribute into organisms after unintentional exposure, it is pivotal to investigate their potential toxicity in cells and in the organism. (This thesis)

2. Precision-cut tissue slices (PCTS) represent a promising alternative to *in vitro* models to study nanoparticle behavior and potential toxicity *ex vivo* using a real piece of tissue. (This thesis)

3. Nanoparticles in *ex vivo* liver PCTS are accumulated preferentially in Kupffer cells, as is also observed for many nanomaterials in *in vivo* studies. (This thesis)

4. Exposure conditions and the ageing of nanoparticle dispersions in biological media can affect the final response of liver PCTS to nanoparticles. (This thesis)

5. The 3D *ex vivo* PCTS model revealed differences in expression of Vanin 1 during fibrosis. (This thesis)

6. If a cluttered desk is a sign of a cluttered mind, of what, then, is an empty desk a sign. (Albert Einstein)

7. Everyone you meet is fighting a battle you know nothing about. Be kind. Always. (Brad Meltzer)

8. Being happy does not mean that everything is perfect. It means that you've decided to look beyond the imperfections. (Gerard Way)

9. Only kind people are truly tolerant. Only gentle people are truly strong. (C.B. Martin)